MITSUBISHI ELECTRIC

Changes for the Better

Mitsubishi PLC

December 2003

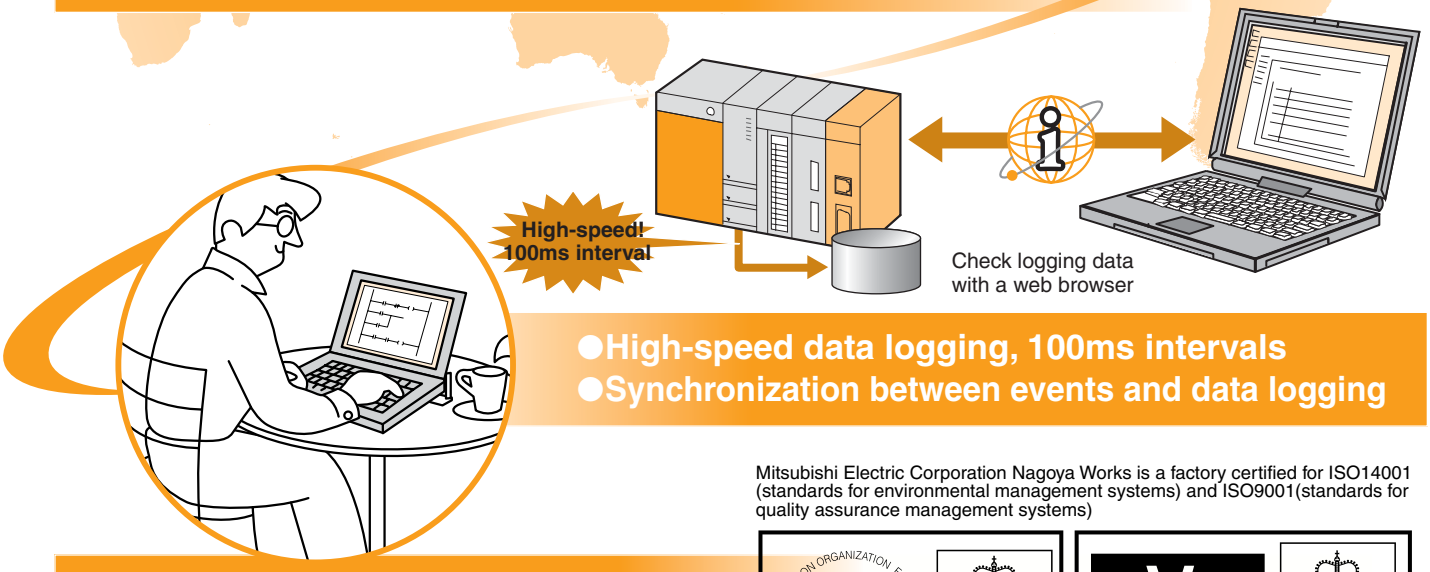
New Product Release

No. 211E

QJ71WS96
Web Server Module

An advanced Web server module with powerful remote maintenance tools.

- Monitor controller status from the cellular phone
- Change data value from user created html



- High-speed data logging, 100ms intervals
- Synchronization between events and data logging

- Ladder monitoring incorporated into GX Explorer Ver. 2.

Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001(standards for quality assurance management systems)

ISO 14001 JACO UKAS ENVIRONMENTAL MANAGEMENT 051

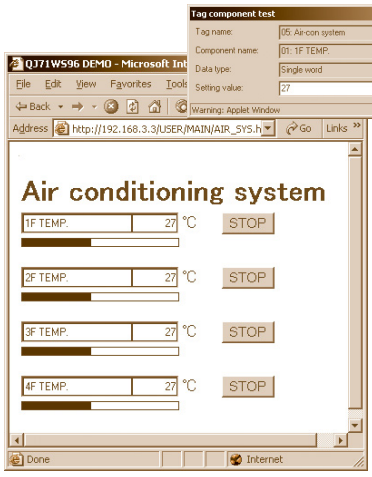
BVQI ISO 9001 UKAS QUALITY MANAGEMENT 008

Features

1. Increased functions for creating customized web pages

- ●Change states or values using parts
  Turn bit data ON/OFF and change data values from customized web pages.
- ●Customized web page
  Create separate web pages for each user.
- ●Utilize standard parts
- ●Specific customized pages for cellular phones
  Operations are confirmed directly on the cellular phone.
- ●Text only customized pages
  Create simple to use pages

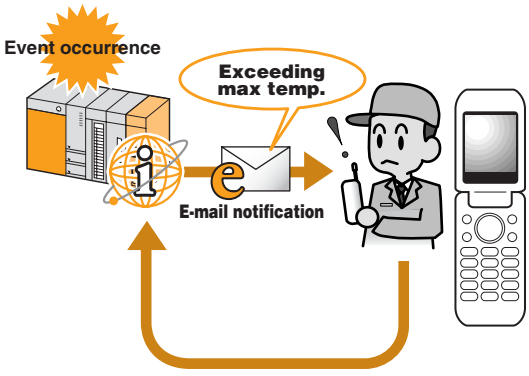
Added write parts


Tag component test
Q171WS96 DEMO - Microsoft Int
Air conditioning system
1F TEMP. 27 ℃ STOP
2F TEMP. 27 ℃ STOP
3F TEMP. 27 ℃ STOP
4F TEMP. 27 ℃ STOP

▲ **Data block part**
Double-click on data to show dialog box.

◀ **Write button part**
When button is clicked, specified value is registered into corresponding tag device.

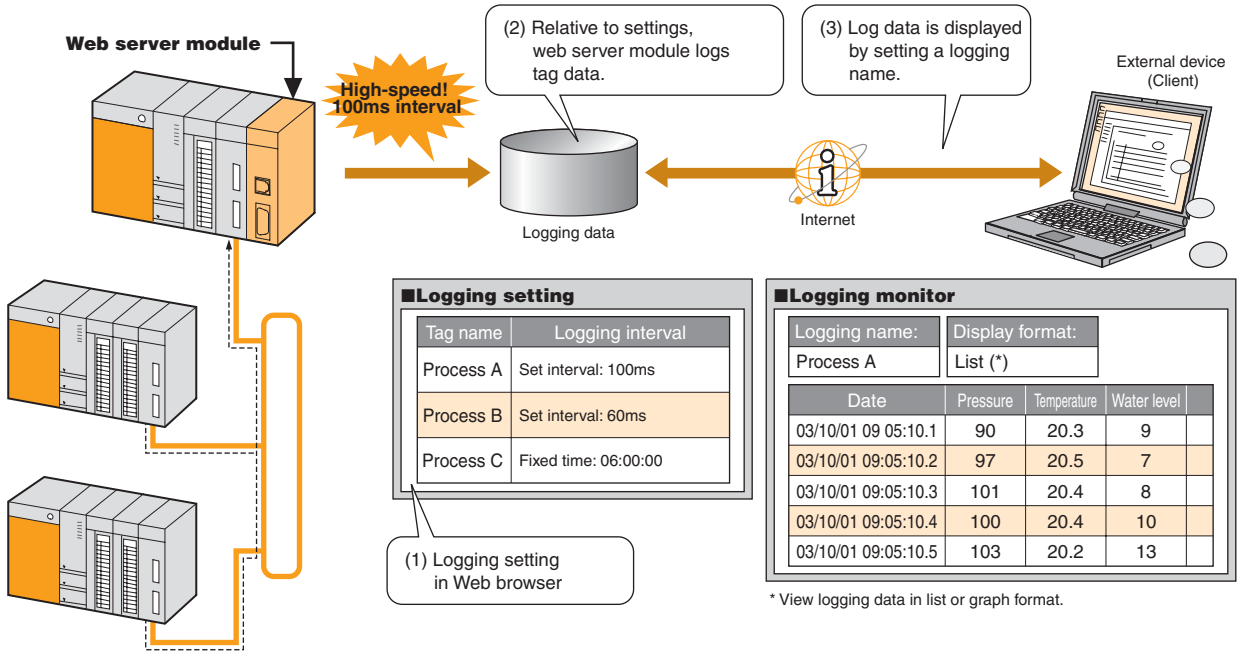
User screen for cellular phone



Checking details with a cellular phone

2. Data logging functions

- ●High-speed data logging at 100ms intervals
- ●Logging is triggered by events.
  Useful for determining errors before/after they occur.
- ●Setting file names for logging files
  Efficient file management by adding, file name and date/time stamp.
- ●More improved functionality for logging monitor
  Standard logging monitor is far easier to use because of added functions.


Web server module
High-speed! 100ms interval
(2) Relative to settings, web server module logs tag data.
(3) Log data is displayed by setting a logging name.
External device (Client)
Logging data
Internet
(1) Logging setting in Web browser

■Logging setting

Tag name	Logging interval
Process A	Set interval: 100ms
Process B	Set interval: 60ms
Process C	Fixed time: 06:00:00

■Logging monitor

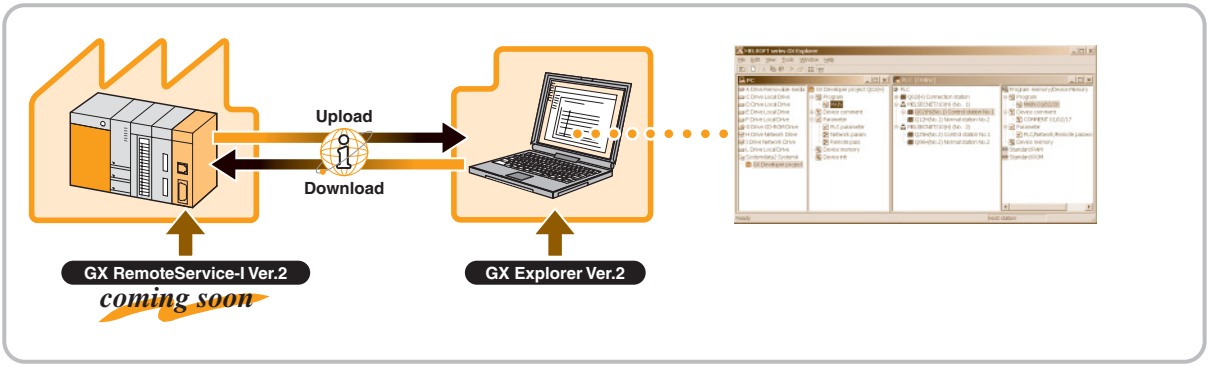
Logging name:	Display format:
Process A	List (*)

Date	Pressure	Temperature	Water level
03/10/01 09 05:10.1	90	20.3	9
03/10/01 09:05:10.2	97	20.5	7
03/10/01 09:05:10.3	101	20.4	8
03/10/01 09:05:10.4	100	20.4	10
03/10/01 09:05:10.5	103	20.2	13

* View logging data in list or graph format.

3. Ladder program monitoring *1

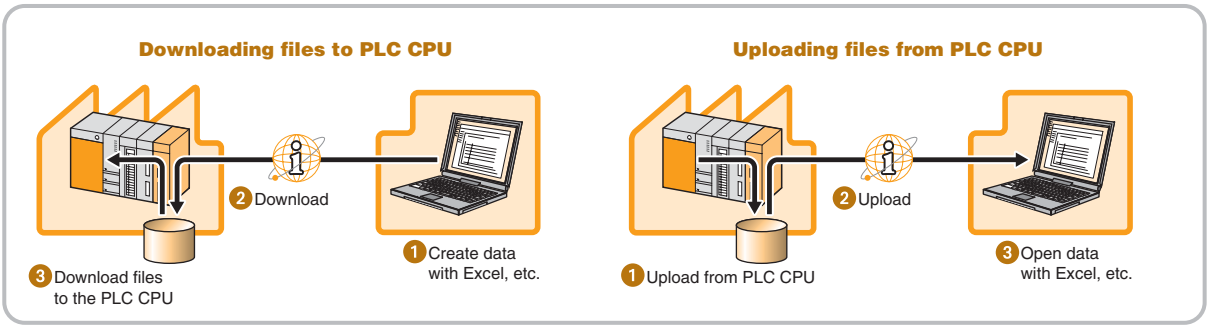
- Remote monitoring and diagnostics for ladder program.
- Functions include upload, download, edit of ladder program(s). *2



*1 GX Explorer Ver. 2 and GX RemoteService-I Ver. 2 (coming soon) are required.
*2 GX Developer is required for editing the ladder programs.

4. Read/write file data to PLC CPU

- Download files to the PLC CPU
  Files, such as recipe data, are downloaded to the PLC CPU (Select the file format from binary or CSV).
- Upload files from the PLC CPU
  Produce data in list form, etc., in the PLC CPU (Select the file format from binary or CSV).


Downloading files to PLC CPU
2 Download
1 Create data with Excel, etc.
3 Download files to the PLC CPU
Uploading files from PLC CPU
2 Upload
3 Open data with Excel, etc.
1 Upload from PLC CPU

5. Event monitor

- Increased functionality for event monitoring
  The number of CPUs and tag data (devices) that can be monitored simultaneously has been increased, therefore larger systems can be monitored.
  CPU event monitor: Up to 64 points (Normally 16 points)
  Tag event monitor: Up to 256 points (Normally 16 points)
- Event triggered network connection
  Network connection/disconnection can be triggered by events.
  This method is ideal for applications where the network connection is charged corresponding to "online time".

6. IP filter

Enhanced security features by incorporating an IP filtering system, therefore only allowing access to permitted IP addresses.
Therefore by combining this feature with HTTP Basic Authentication features, higher security is achievable as standard.

7. Universal Plug and Play (UPnP)

- Easily connect the QJ71WS96 and broadband router with the UPnP function. Several personal computers can share one ADSL line by using a broadband router.
- By installing the broadband router, the broadband router's firewall function and VPN function is used to further enhance security.

* If the broadband router is incompatible with UPnP, a fixed global IP address must be provided for the ISP.

8. Seamless communication

Multi-tier network CPU access is realized.
(CPUs connected with CC-Link via MELSECNET/H, etc. Normally, access to CPUs residing in the same network was possible)

9. Self-diagnostics monitor

A self-diagnostics monitor screen is incorporated to display the Web server module's operation status and error codes. Troubleshooting of the Web server module is simplified with this function.

Function List

Function		Description
Monitor Function	Device monitor	Monitors device values.
	Tag data monitor	Monitors tag data.
	Logging data monitor	Monitors logging data.
	Event history monitor	Monitors event histories.
	PLC diagnostics monitor	Monitors PLC CPU operation status.
	Self-diagnostics monitor	Monitors Web server module operation status.
Tag function		A group of devices from each PLC CPU are set as a tag name. Therefore each tag can be easily viewed on the web page.
Logging function		Tag data is collected periodically (user-set), and saved as a CSV file. This data can then be displayed as a list or graph on the web page, or downloaded to a PC by FTP.
Event monitor function		Monitors the PLC status (CPU monitor), tag data (tag monitor), and time (time, interval monitor), and stores the event historical data in a CSV file. The stored event historical data can be displayed in the Web browser or be downloaded by FTP. Also, e-mail transmission is available as necessary when an event occurs.
E-mail function		Used to send e-mail. * Sends e-mail by PLC CPU * Sends an e-mail triggered by an event.
FTP function		Files are transferred between Web server module and client. * FTP server function * FTP client function
Access log function		Records an access log between Web server module and client.
Address notification function		Notifies Web server modules IP address to client.
Data management function		Functions are back-up/restore standard ROM contents, Compact Flash™ Card formatting, CSV file import/export.
Diagnostics function		Web server module self-diagnostics and connection test.
User customized web page function		Enables creation of customized web pages by utilizing the supplied parts (Java applets, SSI and CGI).

Performance Specifications

(1) Transmission and I/F specifications

Item			Specifications	
10BASE-T/ 100BASE-TX	Interface (*1)		10BASE-T	100BASE-TX
	Data transmission speed		10Mbps	100Mbps
	Transmission method		Base band	
	Maximum number of cascade connection		Cascade connection maximum 4 tiers	Cascade connection maximum 2 tiers
	Maximum segment length (*2)		100m	
	Supported function		Auto negotiation function (automatically recognizes 10BASE-T/100BASE-TX)	
RS-232	Interface		RS-232 compliant (D-sub 9 pin)	
	Communication method		Full-duplex communication	
	Synchronization method		Start-stop synchronization	
	Transmission speed		9600, 19200, 38400, 57600, 115200bps	
	Transmission distance		Maximum 15m	
	Data format	Start bit	1	
		Data bit	8	
		Stop bit	1	
	Parity check		None	
	Transmission control		Flow control (RS/CS control) is available.	
	Recommended cable		7/0. 127 □P HRV-SV outside diameter: 8.5mm or longer (Oki Electric Cable Co., Ltd. □: indicates number of pairs.)	
	External wiring connector		9 pin D-sub (male) fixed type	
Compact Flash™ card	Supply power voltage		3.3V±5%	
	Size		TYPE I card	
	Number of mountable cards		1	
Noise immunity, dielectric withstand voltage, insulation resistance			According to the base unit power supply where the Web server module is mounted.	
Number of occupied I/O points			32 points/1 slot (I/O assignment: intelligent 32 points)	
Maximum number of writes for Standard ROM (Flash ROM)			Maximum 100,000 times to one area	
Clock			In step with the first CPU. (every 60 seconds)	
5VDC internal current consumption			0.65A	
External dimensions (mm)			98(H) X 27.4(W) X 90(D)	
Weight (kg)			0.17	

*1 The Web server module automatically distinguishes between 10BASE-T/100BASE-TX connection.
If the connected hub does not support auto negotiation function, then set its communication mode as half-duplex.

*2 Distance between the hub and node.

(2) Software Specifications

Function		Description
Web server	Number of simultaneous connections	5
	HTTP version	1.0
	User area capacity	Standard ROM: maximum 5MB When Compact Flash™ card is used: maximum 1GB (Including the web page capacity and logging capacity)
	User authentication	Account number: maximum 16 (User ID: 1 to 20 characters, Password: 6 to 14 characters)
	Supplied parts	Java applet: 14 types SSI: 1 type CGI: 3 types (Files supplied as standard with the Web server module can be used. (Creating by users is not possible.))
Browser	Compatible web browser	Internet Explorer 5.5/6.0 of Microsoft® Corporation
	Java VM	Java VM version: Microsoft® VM Build number 3309 or later Sun Microsystems JRE (J2SE) v1.4.1_02 or later
	Cellular phone	Cellular phone supporting internet e-mail send/receive.
E-mail	Subject	Maximum 373 words
	Main text	Maximum 960 words
	Attached file	Maximum 256k words (512kB)
	Attached file format	MIME Format
	MIME version	1.0
	Attached file data	CSV or binary format
	Splitting files	Attached file cannot be divided.
	Encryption	None
	Compression	None
	Communication with mail server	SMTP (send server) port number = 25
	Compatible e-mail s/w	Internet Explorer 5.5/6.0 of Microsoft® Corporation (Outlook® Express 5.5/6.0)
	Others	"POP before SMTP" is available.
FTP server	Server function	Provided
	Number of simultaneous connections	10
FTP client	Client function	Provided (PUT, GET)
Security	User authentication	Account number: maximum 16 (User ID: 1 to 20 characters, Password: 6 to 14 characters)
Data collection	Access log	Maximum 500
	IP filter	Number of registrations: maximum 32
	Tag	No. of tags: maximum 64, No. of components: maximum 4096 (up to 64 per tag)
	Logging	No. of logging: maximum 64, No. of lines (Number of records): maximum 10000 lines
	Data collection interval	• When "Collection setting: High-speed collection" is selected with tag setting (only management CPU): 100 to 60000ms (total number of device points: maximum 96 points) • When "Collection setting: Collect" is selected with tag setting: 1 to 32767 seconds (number of elements: maximum 4096 points)

Connection Configuration Devices

Device		Description
Compact Flash™ card	Specifications	TYPE I storage card that meets the Compact Flash™ specifications
	Number of mountable cards	1

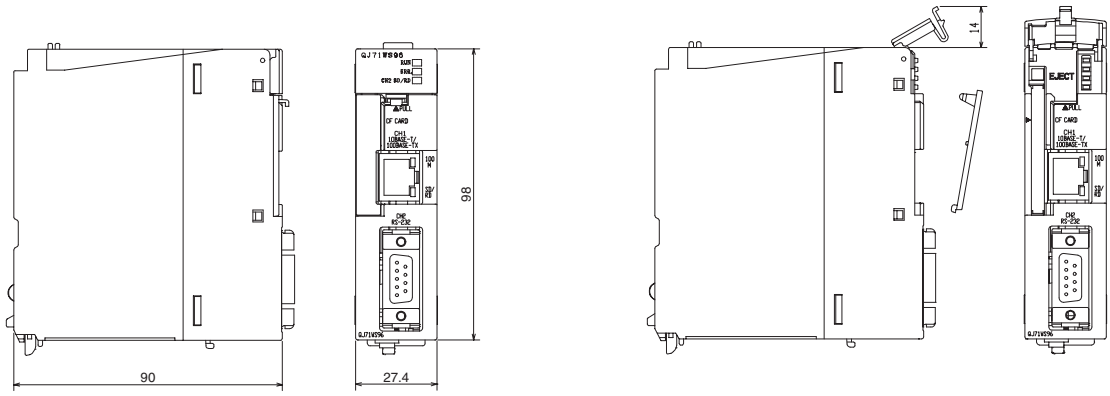
Device		Description
Analog modem, PHS modem	Web server module interface	Available for Web server module CH2 (RS232) interface. (*1)
	Data communication control command	Supporting Hayes compatible AT commands.
	DR Signal Control	Independently turn on DR (DSR) signal.
ADSL modem	Web server module interface	Available for Web server module CH1 (10BASE-T/100BASE-TX) interface. (*1)
	Protocol	PPPoE (PPP over Ethernet) or PPPoA (PPP over ATM)
	Connection style	Bridge type or router type (having same functions as broadband router)
Broadband router	Web server module side interface	Available for Web server module CH1 (10BASE-T/100BASE-TX) interface. (*1)
	NAT	Must have NAT (address conversion) function
	UPnP	Must be compatible with Universal Plug and Play (UPnP) (*2)

*1. Refer to item (1) of the performance specifications for details on the Web server module CH1/CH2 transmission speed.
*2. If the product is incompatible with UPnP, a fixed IP address contract must be bound with the internet service provider, and the router NAT settings must be made by the user.
*3. The IEE802.3 10BASE-T/100BASE-TX Standards must be satisfied.

Device		Description
Internet service provider	Protocol	PPP (Point to Point Protocol)
	Authentication method	PAP or CHAP (Operable without authentication)
	IP address	Global IP address must be assigned. (*2)
	E-mail (When being set)	SMTP server must be prepared.

Please contact your local Mitsubishi representative for compatible devices.

External Dimensions



Product list

Product name	Model
QJ71WS96 Web server module	QJ71WS96

Manuals

Relevant manuals

Manual name	Manual supply status	IB/SH No.	Model code
Web Server Module User's Manual (Hardware)	Included with product	IB-0800231	13JT97
Web Server Module User's Manual	Sold separately	SH-080320E	13JR58

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